

APPENDIX B

Appendix 5 (Special Studies) from “Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California”

Pre-Evaluation for Special Studies Decision Tree with Attached Narrative Discussion

A special study is sometimes conducted as part of a regulatory process (standard setting and permit writing) and may be conducted as part of a collaborative watershed planning effort. Special studies can provide site-specific data that can assist in decision-making regarding water quality and beneficial use issues.

Many water quality problems may be best addressed on a watershed or water body basis. The SWRCB believes that stakeholders should be able to develop flexible and innovative solutions for water quality problems in their watershed. For special studies conducted as part of a watershed management plan, the watershed management group should be involved in the design of the study, and study information should be provided back to the committee. Watershed or water body studies may gather data regarding topics such as:

- TMDLs, WLAs, and LAs (see Appendix 6);
- Regional ambient monitoring (regional ambient monitoring is the collection of scientific information regarding water quality and impacts to beneficial uses for a specified portion of, or an entire, watershed or water body); and
- Contaminant fate and transport monitoring (contaminant fate and transport monitoring is the gathering of scientific information regarding how a specific pollutant[s] moves through the environment and how the pollutant[s] degrades or is otherwise transformed in the environment).

These types of studies are useful to collect integrated, comprehensive, and systematic data regarding:

- Baseline concentrations of toxic pollutants in the water and sediment;
- Seasonal, annual, and long-term trends in water quality;
- Causes and effects of water quality problems;

- Effectiveness of a water quality control effort;
- Greater certainty regarding existing monitoring data; etc.

Any of the studies discussed below may be undertaken as part of a watershed approach to addressing regional water quality issues. Information collected as part of a watershed or water body study can be used as a way to define parameters (e.g., ambient background concentrations, mixing zones, etc.) related to the development of effluent limitations as part of the permitting process or to evaluate whether changes in water quality standards are appropriate. A watershed or water body approach is also useful to dischargers because information collected as a part of one effluent limitation or standard-setting study can be shared with other stakeholders in the same water body.

Studies for Setting Effluent Limitations

Studies regarding establishing effluent limitations can be done as part of the permitting process. Such studies may be simpler and there may be fewer interested stakeholders than studies involving more than one discharger, or an entire water body or watershed. However, when such studies are undertaken individually, the discharger, the RWQCB, and other stakeholders do not gain the benefit of data collected from others in the watershed.

Special studies may address topics such as the following:

- Determining pollutants requiring effluent limitations (see section 1.3);
- Metals translators (see section 1.4.1); or
- Mixing zones (see section 1.4.2).

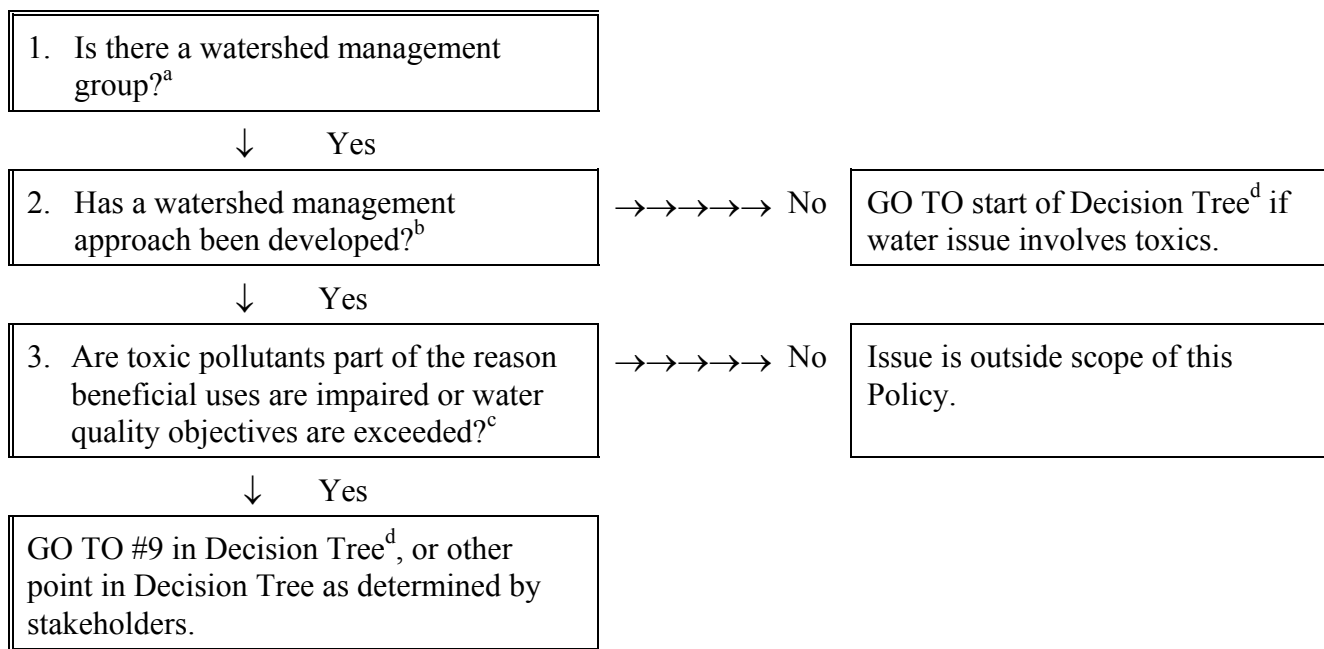
Studies For Changes to Water Quality Standards

Establishing or modifying water quality standards (i.e., beneficial uses and water quality criteria/objectives) may involve complex and resource intensive studies. A detailed workplan will normally be needed because early planning and coordination with the RWQCB and U.S. EPA is critical to the development of a successful study. In addition, a workplan will normally be appropriate because there will be more stakeholder interest and involvement of other public agencies (e.g., Department of Fish and Game, U.S. Fish and Wildlife Service, etc.). Involvement in a watershed management planning effort would facilitate the sharing of information among stakeholders in the watershed, both in gathering information for the study and in sharing the results. Studies related to changes in water quality standards may address topics such as the following:

- Site-specific objective studies (see section 5.2); and
- Use attainability analysis (UAA) (see section 5.2).

Pre-Evaluation

As a first step in determining whether and how to conduct a special study, the RWQCB or other stakeholders may want to evaluate whether it would be appropriate to address a water quality issue through a watershed management approach. To do that, the factors in the following flowchart may be considered:



^a Is there a committee of local interests in both the public and private sectors that are actively involved in the management of the watershed area?

^b Has a watershed management approach that identifies key issues, boundaries, objectives, and early actions been developed?

^c A study may be necessary to determine whether toxics are part of the cause of the impairment of beneficial uses. This Policy applies only to the CTR and NTR criteria; and applicable chemical-specific basin plan objectives for priority toxic pollutants.

^d The decision tree is on page B-6.

The decision tree and associated narrative discussion in Appendix 5 are provided to assist RWQCBs and stakeholders in identifying whether there is a current or potential water quality issue requiring attention [Compliance Status], the nature of the identified water quality issue [Screening-level Evaluation], and possible action to address the issue [Potential Options].

Based on this information, the RWQCB and stakeholders can determine whether a special study is needed and the scope of the study. This approach can help avoid initiation of costly and time-consuming studies which are not appropriately designed to resolve the specific issue in question. The decision tree is not meant to preclude the exploration of any other creative solutions; it is meant to encourage constructive dialogue among stakeholders.

Two specific considerations should be kept in mind when conducting the pre-evaluation suggested by this decision tree. First, users must be familiar with the quality of the data under review and the potential need to augment data which are not of adequate quality. Second, users should know what the existing beneficial uses are (i.e., uses attained since 1975).

Special Studies Process

A. Workplan

If appropriate, the RWQCB may participate in developing a detailed workplan with interested persons (which can include, but are not limited to, U.S. EPA, the RWQCB, the SWRCB, and affected dischargers) prior to proceeding with a special study. The workplan may include the following elements:

- (1) Formation of a project team for the workplan, which may include the Department of Fish and Game, the U.S. Fish and Wildlife Service, and other stakeholders;
- (2) Purpose of the workplan;
- (3) Responsibilities of the persons associated with the workplan;
- (4) Budget and cost-sharing plan. This plan must be determined on a case-by-case basis; however, the SWRCB encourages sharing of costs (based on availability of funding), where there are multiple persons who wish to support the goals of the study;
- (5) Development of the following elements:
 - (a) Identification of tasks(s),
 - (b) Purpose of tasks(s),
 - (c) Method by which task(s) will be implemented,

- (d) Products of the task(s),
 - (e) Schedule for the task(s),
 - (f) Responsibility for implementing the task(s), and
 - (g) Budget and funding for the task(s);
- (6) Administrative policies and procedures to govern oversight of the special studies process (e.g., amending the workplan, conflict resolution, etc.); and
- (7) Project schedule.

B. Scientific Review Panel

If, during the data interpretation phase of a special study, the RWQCB, SWRCB, U.S. EPA, or other stakeholders have differing opinions with regard to the interpretation of data, the RWQCB and stakeholders may want to seek the advice of an independent scientific review panel. The method of selecting the panel, cost reimbursement, and other details regarding the conflict resolution process could be included in the workplan.

C. Compliance Schedule

A permit compliance schedule (as described in section 2.1) may allow sufficient time for collection of data, completion of a study, and determination of compliance measures. While special studies are being conducted, interim requirements may be established by the RWQCB (as described in section 2.2). However, in no event may a compliance schedule exceed the time period allowed in this Policy, unless an exception has been granted.

D. Environmental and Economic Impacts

To ensure that environmental and economic impacts are adequately addressed, the RWQCB staff shall, as part of the special study workplan:

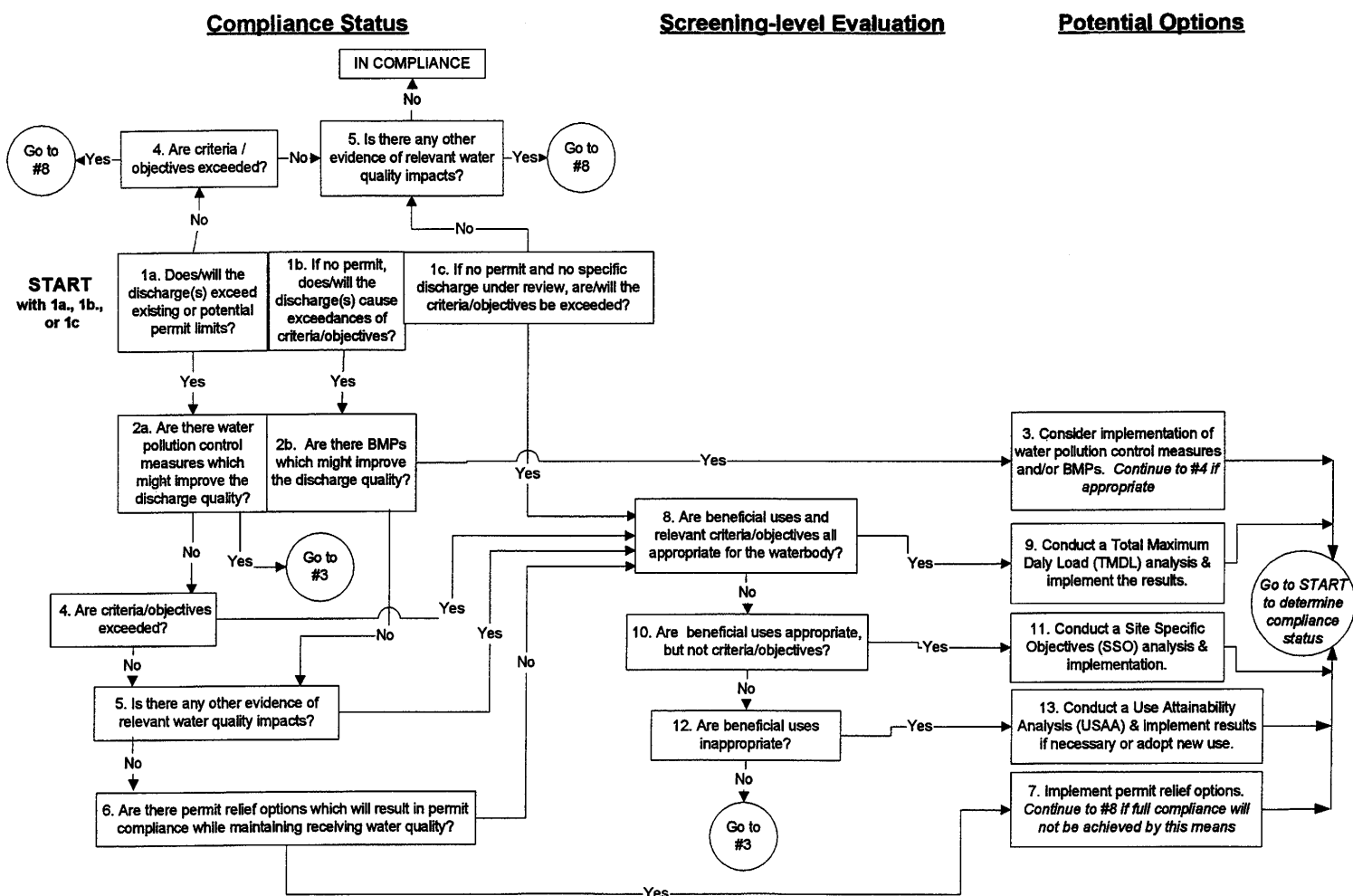
- (1) Comply with CEQA, if applicable; and
- (2) Direct the preparation of an analysis documenting economic impacts if site-specific objectives or a change in designated beneficial uses is being considered under 40 CFR 131.10(g)(6), revised as of July 1, 1997.

E. Antidegradation and Other Legal Requirements

RWQCB staff shall, as part of the special study workplan, ensure compliance with SWRCB Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters

in California) and any other applicable legal requirements.

Pre-Evaluation for Special Studies Decision Tree with Attached Narrative Discussion



Narrative Discussion of Decision Tree:

- 1 a. Does/will a discharge exceed existing or potential permit limits for toxic pollutants? This question applies to discharges regulated by a National Pollutant Discharge Elimination System (NPDES) permit or Waste Discharge Requirements (WDRs). If the discharge(s) in question is not regulated by a discharge permit, proceed to #1b. It is assumed that data used to answer this question are reliable.
- 1b. If no permit, does the discharge(s) cause exceedances of criteria/objectives? This question primarily applies to nonpoint discharges, though it could conceivably apply to point source discharges which are not currently permitted. It is assumed that data used to answer this question are reliable.
- 1c. If no permit and no specific discharge(s) are under review, are criteria/objectives exceeded? It is assumed that data used to answer this question are reliable.
- 2a. Are there water pollution control measures which might improve the water quality? A water pollution control program may include, as appropriate: pollution control technologies; pretreatment requirements; and pollution prevention, waste minimization, and source control measures. This question is meant to elicit consideration of effluent quality control measures which could be implemented as a full or partial solution to the identified permit noncompliance issue. It is not intended as a barrier to the exploration of other potential forms of regulatory adjustment.
- 2b. Are there Best Management Practices (BMPs) which might improve water quality? BMPs are pollution management measures designed to reduce the water quality impacts, where they exist, associated primarily with non-point source discharges. As with #2a above, this question is meant to elicit consideration of discharge control measures which could be implemented as a full or partial solution to the identified noncompliance issue. It is not intended as a barrier to the exploration of other potential forms of regulatory adjustment.
3. Consider whether implementation of water pollution control measures and/or BMPs will lead to compliance. Simultaneously, continue to #4 if deemed appropriate, considering such questions as whether or not full compliance will be achieved by these means, or whether it would be cost effective. As stated, the simple determination that implementation of pollution control measures and/or BMPs might improve the discharge or water quality should not preclude the exploration of other potential regulatory adjustment options, as well. For clarity, the reviewer should proceed not to box four prime, but to box four.

4. Are criteria/objectives exceeded? It is assumed that data used to answer this question are reliable and appropriate hardness adjustments have been made.
5. Is there any other evidence of relevant water quality impacts? This question is meant to capture those situations, where the criteria/objective for the pollutant of concern do not exist or appear to be under protective. "Other evidence" might include: bioconcentration or biocriteria data, population studies, food web analyses, etc. Impacts to wildlife should be considered as should impacts to threatened and endangered species. The potential for impacts to be of a seasonal nature should also be considered in this pre-evaluation. "Relevant water quality impacts" are those impacts which have a demonstrable relationship to the pollutant(s) of concern.
6. Are there permit relief options which will result in permit compliance while maintaining receiving water quality? Permit relief options might include, where appropriate: development of a mixing zone, modification of the averaging periods, adoption of a variance, etc. For unpermitted discharges or pre-evaluations involving no specific discharges, the user should continue to box #8.
7. Implement permit relief options. Continue to #8 if full compliance will not be achieved by these means. The development of permit relief options would occur through a request to the RWQCB.
8. Are beneficial uses and criteria/objectives both appropriate for the water body? To answer this question, a screening-level evaluation may be necessary, including an evaluation of the associated regulatory history; the site-specific conditions; and the status of current, applicable scientific understanding. It is assumed that data used to answer this question are reliable.

This question is best answered when a watershed stakeholder group has formed and collectively either: 1) evaluated the condition of the watershed through a watershed management plan, 2) evaluated the condition of the watershed through less formal means, or 3) convened discussions regarding the condition of the watershed. If one does not currently exist, a watershed stakeholder group should be formed if it appears to be a useful forum for discussion and review. The following more specific questions may apply:

- Is the water effluent dominated, agricultural drainage water dominated, etc.? These water bodies may be likely candidates for the appropriate application of regulatory adjustments (e.g., SSO or UAA).
- Were the current beneficial uses applied on a national, state-wide, or region-wide basis or have they been specifically designated for the water body in question? While not the

only candidates, water bodies for which beneficial uses have been applied on a national, state-wide, or region-wide basis may be candidates for the appropriate application of regulatory adjustments (e.g., SSO).

- Are there rare, threatened, or endangered species, or ecological conditions which the currently applied beneficial uses do not adequately describe or the water quality objectives do not fully protect?
- Has the beneficial use and the water quality necessary to maintain the beneficial use been attained since 1975?
- How do anti-degradation requirements apply?
- Are elevated constituents the result of 1) natural phenomena or 2) anthropogenic activities that ceased prior to 1975?
- Do the currently designated beneficial uses protect all existing and appropriate potential uses?
- Are natural, ephemeral, intermittent, or low flow conditions or water levels preventing the attainment of the designated non-existing uses?
- Are there human-caused conditions or sources of pollution which prevent attainment of the uses but either cannot be remedied or would cause greater environmental damage if corrected?
- Does the presence of dams, diversions, or other types of hydrologic modifications preclude the attainment of designated non-existing beneficial uses?
- Do the physical conditions of the water body preclude attainment of aquatic life protection uses (i.e., lack of proper substrate, cover, flow, depth, pools, riffles, and the like)?
- Does attainment of designated beneficial uses require the application of controls which would result in substantial and widespread economic and social impact?
- Have the appropriate water characteristics (e.g., hardness, pH) been accounted for in the CTR criteria?
- Has an appropriate set of species been evaluated in setting the CTR criteria and toxicity objective?

9. Conduct a total maximum daily load analysis and implement the results. Conducting a TMDL could result in, among other things, waste load allocations, BMP implementation for non-point dischargers, and/or effluent trading options for point and non-point source dischargers. (See Appendix 6 regarding TMDLs.)
10. Are beneficial uses appropriate but not criteria/objectives for toxic pollutants? See #8 above.
11. Conduct a site-specific objectives analysis. An SSO study will include one or more of the following activities:
 - Recalculation of objective;
 - Water effects ratio or other similar method; or
 - Any scientifically defensible process.

U.S. EPA's "Guidelines for Deriving Numerical Aquatic Site Specific Water Quality Criteria by Modifying National Criteria," dated 1984 (EPA-600/3-84-099) provides guidance for conducting an SSO study.

U.S. EPA's "Water Quality Standards Handbook" dated 1994 also provides general guidance in this area.

12. Are beneficial uses inappropriate? See #8 above.
13. Conduct a use attainability analysis (UAA) and implement the results. When a use is proposed for dedesignation, i.e., removed or replaced with a subcategory requiring less stringent standards, a UAA is necessary. In a case where a use is proposed to be added, a UAA is not necessary. A new use designation can be added for a water body following the normal public review process. A UAA will determine if physical, chemical, and/or biological factors affect the attainability of a designated use via a water body survey and assessment. An analysis of economic factors can also be included to determine whether substantial and widespread economic and social impacts would be caused by stringent pollution control requirements.

U.S. EPA's "Technical Support Manual: Water body Survey and Assessment for Conducting Use Attainability Analyses" dated 1983 provides guidance for conducting a UAA as does Region 9's Interim Final "Guidance for Modifying Water Quality Standards and Protecting Effluent-Dependent Ecosystems" dated 1992. U.S. EPA's "Water Quality Standards Handbook" dated 1994 also provides general guidance in this area.